

A
LETTER,

ADDRESSED TO THE

RIGHT HONOURABLE

LORD JOHN RUSSELL, M.P.

Secretary of State for the Home Department,

ON THE EVIL POLICY OF THOSE MEASURES OF QUARANTINE,
AND RESTRICTIVE POLICE, WHICH ARE EMPLOYED
FOR ARRESTING THE PROGRESS

OF THE

ASIATIC CHOLERA;

WITH AN ENQUIRY INTO THE NATURE OF,
AND MEANS OF OBVIATING,

THOSE CIRCUMSTANCES IN THE PHYSICAL CONDITION OF THE
LABOURING POOR, BY WHICH THEY ARE ESPECIALLY
PREDISPOSED TO THE DISEASE, AND RENDERED
NEARLY THE ONLY VICTIMS TO IT.

BY JOSEPH AYRE, M. D.

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TO THE GENERAL INFIRMARY,—TO THE GENERAL DISPENSARY,—
AND TO THE LYING-IN-CHARITY, OF HULL.

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TO THE RIGHT HONOURABLE
LORD JOHN RUSSELL, M. P.
&c., &c., &c.

MY LORD,

It is a fact I presume admitted, that the ASIATIC CHOLERA, which has so long been ravaging the Italian States, has extended itself to France, and to the north of Germany; and that, judging from our knowledge of its course and history, it may be expected speedily to re-appear in this country. It is also, I conclude, no less true, that the question must shortly come under the deliberation of Her Majesty's Government, whether the measures formerly resorted to, shall be again employed for preventing its entrance into these kingdoms, or arresting its progress through them. In all the countries which it has visited, and there are few which it has spared, it has been regarded by the local authorities as originating from, and only communicable by, infection, and, has therefore, been met and opposed by cordons of demarcation, and quarantine restrictions and regulations, on the sole ground of its being so derived. Yet, notwithstanding the universality of the trial of these means by us and others in its former visitation, and which is still continued by the authorities abroad, in no instance has the disease been arrested by them.

Since then as preventive means they have failed, it becomes an anxious duty to enquire, whether their failure has arisen from a defect pertaining to the mode of employing them, and therefore, perhaps, requiring to be more rigorously enforced ; or from something in the nature of the disease itself, which, from not being infectious, and, therefore, incommunicable from the sick to the healthy, necessarily rendered them useless. The question is not a mere professional one, and requiring professional knowledge to appreciate, but is one strictly of facts, and may be made intelligible to all. Neither is it, as it has been represented to be, an idle and profitless one, fitted only to serve as a subject for medical disputation ; but is in truth one of preeminent importance, and involves in it, not merely the welfare, but the very existence, of multitudes. For it is a fact too notorious to be denied, and too nearly connected with this question to be overlooked, that the destitute of the labouring poor form, in every country, of those attacked by it, infinitely the greater number, and in our own were nearly the only subjects of it ; and therefore, that there is something in their physical condition, and allied to their poverty, which in some way predisposes them to its attacks. But the restrictions of quarantine, by interrupting the labours of the manufacturer and the merchant, and thus diminishing the demand for labour, go directly to diminish the resources of the poor,

and thus, by increasing their poverty, increase their predisposition to the disease. Yet if it be indeed and of a truth infectious, as many writers possessing the confidence of the Government have affirmed, and only to be averted or arrested by a quarantine, it then becomes us to employ and to endure it, as one out of a choice of evils entailed upon us by the pestilence. But if, on the contrary, it can be proved, that the disease is not infectious, and that the destitution of the labouring poor is the very cause itself, by which, when it is present, they are especially subjected to the disease, and, when absent, they are exempted from it, then the quarantine, by its restrictions and regulations, and by the poverty, with its multiplied privations, which it creates and perpetuates, becomes a very purveyor to the complaint, feeding it with its victims, and so deserving to be ranked amongst the most pernicious expedients, which prejudice and folly have ever invented to increase the sufferings of mankind.

These then, My Lord, being my views in regard to the evils attendant upon the quarantine, under all its modifications, as employed for arresting this disease, I shall now proceed in my purpose of shewing that the Asiatic Cholera is not infectious; but that it is an *epidemic*, deriving, like the *Influenza*, its existence from a certain condition of the atmosphere;—that this condition is modified in its power of producing the disease by circumstances which are known, and can be

obviated, and pertaining to those localities where the disease prevails;—and that these circumstances, in order to produce the disease, require the aid of that state of the system which is induced by the exclusive, and therefore inordinate use of a vegetable and imperfectly nutritious diet, and by which, when *present*, the poor of all countries are predisposed to be affected by the disease, while the rest of the community are enabled almost wholly to escape it.

And here I may begin by observing, that there is no error so frequently, or so easily committed, as that of mistaking the origin of a disease. Those of the *epidemic* kind, or, in other words, those which are produced from atmospheric influence, as for instance the late *Influenza*; as also those which are *endemic*, and which occur in certain localities, and arise from causes generated in, and peculiar to, them, are frequently thought to be infectious from the circumstance, that several individuals of the same household or neighbourhood, are found to succeed each other in the disease, and apparently from their intercommunication. The *Influenza*, as I have just noticed, affords an example of an epidemic produced by atmospheric influence, whilst of the endemic diseases the common intermittent may be offered as an instance, arising, as it is well known to do, from the *malaria* of marshes, or localities analogous to them, and in which animal and vegetable decompositions are going

on. Both these classes of diseases, with the several varieties into which they may be divided, have severally their own specific *malaria* for their production, and without which they cannot be produced, nor be otherwise communicated. When persons, residing in the vicinity of a marsh, become affected with the remittent fever, and are removed to a distant and healthy situation, no one with whom they have intercourse becomes affected by their disease ; whilst others going to, or remaining in, the locality they left, may become in succession the subjects of it. In these cases, from the frequency of their occurrence, it is demonstrable, that the first case originated from a cause distinct from human infection, and from that and other reasons given above we may justly infer, that the other cases, succeeding it in the same house or neighbourhood, sprung from the same cause ; and so in like manner they, if severally removed, in the same way, into another place, would be found, like the first one, to be equally incapable of propagation. Yet the Malignant Cholera is asserted to be infectious, and to originate from an intercommunication of the sick with the healthy, from the circumstance alone of one case, like those above quoted, succeeding another in the same house or district, the persons so attacked residing in the same locality, and therefore exposed to be affected by the same causes. The reasons then for assuming it to be infectious differ not from those which

would justify our assuming it of remittents and intermittents, about which, indeed, the same error of their being infectious was committed formerly, and subsequently corrected by a more enlarged acquaintance with the true nature of their cause. *This* error then, which *has* thus been made with respect to the cause of these diseases, *may* have been made with respect to the origin of the Asiatic Cholera; and it is my purpose now to point out the numerous facts which go to prove that such an error *has* been committed.

And here I may first remark that, besides the foregoing disorders of the *epidemic* and *endemic* kind, as the *Influenza*, and remittent and intermittent fevers, which in so many points resemble the Asiatic Cholera, and, as arising from specific *Malaria*, are incommunicable, there are other diseases, as small pox, measles, &c. which are confessedly infectious, and only spreading by intercourse. In the course and order of their propagation they invariably obey certain laws, which are proper to them, and which, if the Asiatic Cholera were infectious, it would also obey.

I.—One of these laws is, that when a disease of this class, as small pox, breaks out in an insulated district, it usually commences with a single patient, and the mode of its introduction can be detected; while those which follow are no less unequivocally derived from it. This is confessedly the rule or law of their occurrence;

and if in a few instances the precise origin cannot be traced, in a multitude of others it can, and the fact of its infectious nature is fully made out.

II.—Another law of infectious diseases is, that they are propagated continuously, and in all directions, and in the order of the intercommunication of persons and places.

III.—They are limited to no particular towns.

IV.—Nor to any specific localities in such towns.

V.—And though they may be influenced by the state of the atmosphere for their degrees of intensity, they owe nothing to it for their origin; and they never wholly disappear from a country.

VI.—And, lastly, they attack persons indiscriminately, and of every class and condition.

I may now proceed to enquire how these laws, as followed by infectious diseases, admit of being applied to the facts which we possess in regard to the origin and course of the Malignant Cholera.

I.—It is a fact fully established, that in a great majority of the first cases arising in different towns, the source whence they sprung was unknown, and could not even be guessed; and frequently, instead of these first cases being followed by others in the same house, and so spreading to the immediate neighbourhood, the second or third case was found to occur in some distant quarter of the town; and a fourth in some other district equally apart from the

others, and without any of these parties having had in any manner the slightest degree of communication with each other, or with any foreign medium by which any infection might have been conveyed to them. In the town of Leeds the first case was in a child two years of age residing in an ill drained court ;—the second was also in a child in the same court ;—the third was in a man at a distant part of the town, and who had had no communication direct or indirect with the other patients ; and these cases were followed by a simultaneous outbreak of the disease in its widely spread districts. In this town (Hull) the first case occurred in an entry near the river,—the second a few days afterwards in the western suburb, and nearly a mile distant,—the third and fourth were in two old people, a man and wife, in the northern suburb,—and the fifth considerably apart from these, but in the same distant suburb. None of these patients had had any communication with each other, nor, as far as it could be ascertained, with the town of Goole distant 18 miles, where, during the previous month the disease had existed ; while great numbers of persons from this town were in daily communication with that place, and with persons arriving from it, without any one of them being attacked by it. But the disease did not always commence with a single case, and thence, as it would be assumed, become propagated ; for in many towns it broke out simultane-

ously in many different quarters of them. This was especially the case at Paris, where in a day or two after its first appearance, several hundred persons in widely dispersed parts of the city became in one night attacked; implying, that if the disease owed its origin to infection, and from a foreign source, as from England, where it then chiefly prevailed, it must have been introduced through a multitude of channels, and at the same instant of time, for a multitude of persons in a city previously healthy were simultaneously seized with it; and as the disease appeared in the first case without being traceable for its origin to any distant source, so when most prevailing in a district were its incommunicable properties evident. Hence then it was, that of the several cases which occurred in persons who embarked from this port for America, in none did it appear after a definite period, dating from the day on which they left; and therefore no second case occurred as the consequence of any infectious communication. And the same was true as regarded the several vessels proceeding from other ports where the disease prevailed, and consequently no cases of the disease ever occurred at the quarantine stations; for the *malaria* or other cause generated in those towns, and producing the disease among the passengers and crew, had a definite period for its operation, and there were no materials in the vessel, or about the sick, from which the morbid cause could be generated.

The same fact, as proving the absence of infection, and the incommunicability of the disease by travellers, either personally or otherwise, when they have once left the district where it raged, was strikingly exemplified in the case of a regimental detachment of some hundred Sepoys, who on a march of nearly 600 miles from Madras, encountered and were affected by the disease at four different places where it prevailed, and as many different times, by reaching healthier parts of the country, were enabled to leave it behind them.* But farther,—of the multitudes of persons of this town, whom charity or business led to the bedside of the sick, not one instance fell within my knowledge, of the disease being thereby induced. The medical attendants—the clergy—the visitors—the nurses—and others residing out of the Cholera districts, who carried their patients to the hospitals, or when dead to their graves,—all were alike exempt, and with them all their families and friends, making together a great multitude, who were in constant and hourly communication with the sick. Numerous instances, and many of them fatal ones, occurred in this town without a second case appearing in the same house, as happened, indeed, with the first three cases. In some houses the whole of the family were simultaneously attacked; in others, the second case did not occur until some weeks after the

* Bell, on the Cholera in India.

first one ;—mothers in the *blue* or *collapsed* stage were seen nursing, and even suckling their infants, and infants in the disease nursed by their mothers ;—nurses sleeping by the side of their patients, and patients with their children ;—and the whole family occupying the same room ; and though I have watched for the issue of these seemingly perilous trials, I never met with an instance in which infection could be presumed ; for on numerous occasions, either no second case occurred, or not until several weeks had elapsed.

II.—Another law regulating the course of infectious diseases is, that they are propagated continuously, and in the order, therefore, of the juxta-position of persons and places.—

The first appearance of the disease in France was at Paris, where, as it has just been noticed, it broke out suddenly and extensively, and, as it was supposed, from an infection conveyed there by travellers from England. But in whatever way it is assumed to have been brought there, the cause, if conveyed at all, must have passed in its course through the intervening towns and villages ; and yet in none of these places did the disease appear.

During the four months the disease prevailed in Hull, several of the other towns of the counties of York and Lincoln, were likewise affected ; yet in none did the disease appear to arise from any infectious communication. As

the complaint broke out at Paris so it broke out in those places ; while numerous villages and towns, which were situated between them, and in the direct line of their road communications, were wholly untouched by it. There was no interruption whatever in the intercourse between Hull, and York, and Whitby where the disease prevailed, on the one hand, and on the other, with the towns, of Scarborough, and Bridlington, and Beverley, and Hedon, with the villages lying between them, yet in these last *not a single case* of the disease appeared. The town of Beverley, consisting of a population of 6 or 7000 persons, is but 8, and Hedon but 5 miles, distant from Hull, and the intercourse between these towns and Hull was constant and even multitudinous, yet without the production in them of *even one* case. Individuals going from Hull while labouring under the disease, were seized with it in the streets of those places, and in some of the adjoining villages, where they died ; but no second case appeared in them, and all around us in fact, both towns and villages, remained entirely secure from it. In the same way, indeed, as the city of Durham was wholly untouched by the disease, although exposed to the double risk of infection, if risk there were, from its vicinity to the towns of Sunderland and Newcastle when the disease existed in those places, so the towns of Beverley and Hedon contiguous to Hull, with the surrounding villages, with which we

were in full communication, were entirely and absolutely exempt from it. If we subscribe to the notion, so strongly urged, and, unfortunately, so generally entertained, that this disease came to, and spread through, this and other countries from the agency of infection, we have to account for the anomalous fact, of its being able, from the assumed malignancy and facility of its communication, to render alike nugatory those cordons of demarcation, and quarantine regulations which were formed to arrest it; and even to pass over to America; and this by modes of intercommunication which it is impossible to detect; yet that in the several countries where it prevailed, it laid aside the whole of its imputed malignancy and facility of communication, and all the most ordinary and recognized signs of an infectious quality, and became wholly limited to certain towns and villages, leaving others in their immediate neighbourhood, and in the direct line of their intercommunication, untouched.

III.—Another law followed by the Malignant Cholera, and by which it is distinguished from diseases of infection is, that it is limited in its range to persons residing in certain localities, and beyond which it is not found. This rule of the disease was early shewn at its entrance into this country, in the immunity of the city of Durham from the disease, though placed, as I have just noticed, in the immediate vicinity of places where the

disease prevailed, and between which there existed an unrestricted communication, and even to having some of the sufferers from those places dying within its streets. There were more than 800 persons affected by the disease in this town, and it remained with us nearly four months; yet during the whole time, no other town of the East Riding, with the exception of Goole, and the villages on the banks of the Ouse, were attacked by it, although the fullest communication was maintained with all.—What, it may be demanded, assuming it to be infectious, and as such to have been brought to this country, and so propagated amongst us, is the reason why the towns of Scarborough and Bridlington and Beverley and Hedon, were exempted from the disease, whilst Hull and York, and Whitby and Goole were attacked by it? The answer plainly is, and it is the only one that can be given, that the disease is not communicated by a personal intercourse, or other foreign medium; but that, in the same way as the *malaria* producing intermittents and remittents, or that giving rise to the yellow fever in the West Indies and America, is each of a specific nature, and generated each in specific and known localities, so the *malaria* of the Malignant Cholera has specific localities for its generation, and where it can alone be produced. Of the true cause of this difference in the aptitude of certain and given localities, and the total unfitness of others, it is

neither easy nor necessary to pronounce a decided opinion. It may, however, be noticed as a point not undeserving of consideration, that there is *one peculiarity* belonging to the towns of Hull, York, Whitby, and Goole, and, if I mistake not, to *all* the places in this and other countries, where the disease has ever prevailed, which distinguishes them from other towns and villages in the same countries, which escaped it; and *this* peculiarity consists in the circumstance of there being a *navigable river or canal running through or past them*.

The advocates for the opinion of the disease being infectious, have appealed to the circumstance of its having travelled across the continents of Asia and Europe, and as they assumed, by the medium of travellers, since it was found to attack the inhabitants of places situated on the high roads. But the high roads of most countries generally lead up to, and through, towns built upon the banks of rivers, which are usually the situations chosen for them. In this country, covered over as it is with a numerous population, all its roads may be said to be relatively high roads; but the disease did not travel along them, as it is vaguely asserted to have done along those of the continent, or if it did, it must have been after a manner the most capricious; for it was not along those upon which there was the most traffic, nor to villages and towns the most contiguous, but only along those which ter-

minated at others, no matter how distant, or how little frequented by travellers, which were placed upon the banks of a river or canal. There is a high road, and a multitudinous intercourse, between Hull and York on the one hand, and Beverley and Bridlington and Scarborough and the villages between them on the other; yet the former towns, which were affected many months by the disease, transmitted no infection of it to the latter; and these remained secure from the disease; and for the single reason, that their localities were *incapable* of generating that *malaria*, which could alone produce it. The poor among the inhabitants of the several towns and villages of this and other districts throughout the country, which escaped the disease, differed in nothing in their physical condition from the same class of persons in the places where it prevailed; nor was there any thing different in the condition of the places, excepting in the circumstance of a river or canal being contiguous to the affected towns. Whether, however, the entire exemption of the numerous towns and villages in this and other countries, depended upon the absence of a river, is a point nowise material to the question at issue, and may be left for future observation to determine. We are at present necessarily much too uninformed upon the nature of this specific *malaria*, and of the mode and materials of its generation, to decide upon what its origin depends; and

whether it is essentially, or only accidentally, produced from materials supplied by rivers or their banks. Through the whole of this country, if I mistake not, it was limited in its range to places so situated; though it is quite conceivable that there may be localities apart from the side of rivers, and yet analogous to them, which may be capable, like them, of generating the *malaria* of this disease. The main fact upon which it is important to insist, and which, in closing this branch of the subject I may here repeat, is, that the Asiatic Cholera is distinguished from diseases of infection in not being propagated continuously, or by personal intercourse; but that it owes its production in every case to *malaria*,—that this *malaria*, like that generated in marshes, and giving rise to intermittents and remittents, is of a specific nature, and is produced from materials supplied from rivers or their banks, or by localities analogous to them, and possessing certain properties in common with them.

IV.—But besides the limitation of the range of the Malignant Cholera to certain localities, as depending for its existence upon a *malaria* that is alone generated there, and by which it differs from infectious diseases, it is found, that in the very towns where the disease is seated, it commences, and chiefly prevails, in particular quarters of those towns, especially selecting the streets where the DRAINAGE is most defective, and which are situated nearest the rivers. In

this town there were three divisions in which the disease especially prevailed ; one of these was inhabited principally in two of the streets by Irish, and where there were no underground drains ; while the two other quarters were on each side of the river Hull, and where the drains, from being in many cases below the level of the river, were of necessity imperfectly emptied, and from which their contents frequently flowed up into the houses, or were discharged into the stagnant ditches behind them. Between the first and second outbreak of the disease, some of the streets in the Irish quarter, where the disease had prevailed with the greatest malignancy, had efficient underdrains made through them, and at the second appearance of the disease in this place, all the inhabitants of these particular streets, with a few exceptions, escaped it. In the report published by the Board of Health of Leeds, the influence of defective drainage in favouring the production, and determining the range of the disease, in the towns affected, is shewn very clearly by the aid of a map, which exhibits the particular streets of the town where the disease almost exclusively prevailed, and which, as was found to be the case in Hull, were precisely in those quarters of it where the drainage was most defective.

V.—But besides the foregoing conditions of a river or canal, and defective drainage, as essential to the production of the *malaria* of this disease,

there is another auxiliary required to imbue it with its specific properties or power to produce the disease, and by which it is distinguished from every disorder possessing an infectious quality. And this is the accession of a certain state of the atmosphere, by which new attributes are acquired to it, and certain disorders induced by it. Of the causes leading to these changes nothing is known ; and of the changes themselves, all our knowledge is limited to their effects, as these are manifested in the occurrence of epidemics. Their power extends very frequently over more than half the globe, proceeding from one country progressively, and often slowly, to others ; and while, in some cases, they may bring into one climate, diseases only known before in the other ; they produce only at other times a greater increase in the number or malignancy of the disorders proper to each. It is not in the nature of these acquired attributes of the atmosphere to originate a new disease, in situations unfitted, under any circumstances, to produce it. The intermittents and remittents, therefore, will still preserve their peculiarity of being the produce of marshes alone, or of localities analagous to them ; and all other diseases will arise as before from their respective causes ;—the influence of the atmosphere being exerted in its several changes, in rendering only the cases of each as they occur more numerous, or more malignant. This influence

then of the atmosphere, like that which so lately converted a common cold, or what seemed one, into the specific properties of the *Influenza*, brought into activity the *malaria* of our rivers and drains, giving rise to the *Cholera* ; and without the aid of which influence the disease could not have appeared. For during the many months that it was prevailing in the ports of the German sea, our drains were in the same state as they were when the disease broke out,—and as they had been in previous years,—and as they were when the disease left us,—and as they have been since.—It was, therefore, the atmosphere, which imbued with morbid properties, modified the morbid exhalations of certain localities, giving origin to *Cholera* ; and as it had thus produced the disease first in India, so its operation continued across the continents of Asia and Europe, spreading through various countries, and continuing in each a definite, and nearly the same, period,—and as it is to be feared, with a definite period for its return.

VI.—Another law remaining to be noticed as pertaining to infectious diseases, from which the *Cholera* is especially distinguished, is, that they attack persons of all circumstances, as well as in all places, and in every condition or rank of life. The susceptibility to be acted on by them is well nigh universal ; and no causes inducing a predisposition to be affected by an infectious disease is necessary to give the poison

its effect. In the case of the *Malignant Cholera*, a certain state of predisposition in the persons exposed to its *malaria*, seems necessary to give effect to its proper causes ; forming thus at once an important feature in the complaint, and a still more important one in the measures required for its prevention.

It is a fact, which I have already adverted to, and which is, unhappily, too notorious, that the destitute of the labouring poor are so nearly the exclusive victims of the disease, as to prove, that something in their physical condition, and pertaining to their poverty, predisposes them to its attacks. What, it may be asked, is this something ? The physical condition of the destitute among the labouring poor, as constituting a difference between them and the classes in easier circumstances, can depend only upon the nature of their clothing,—of their dwellings,—and of their diet. The difference, in respect to their *clothing*, needs not be noticed. The disease occurred in the hottest weather, when no evil could arise from an insufficiency of clothing. With regard to the *houses* of the poor, it was a prejudice early and strongly entertained, that a neglect of cleanliness in their dwellings, by favouring the generation and spread of the infection, predisposed them to the disease, and materially contributed to propagate it. But the fallacy of these views was amply proved by the fact, that, with the exception of the houses in

the Irish quarter, and one or two other streets, nearly all in that part of the town, and a very great proportion of those in the northern suburb, where the disease so much prevailed, were, with their inhabitants, peculiarly clean; whilst, at the same time, the population was comparatively thin, the streets being wide and well paved; and the houses, which consist at most but of three or four rooms, and recently erected, were occupied, for the most part, by single families. It was not, therefore, from anything in the state of their clothing, nor from the interior condition of their dwellings, as fostering the origin, or favouring the spread, of an infection, that the poor should have become so especially the victims of the disease. There remains, therefore, but one other peculiarity which we have to notice, and by which they are distinguished from the classes above them, and this is in their *diet*; and in this is contained the whole mystery, why the destitute poor of this and all countries endured its attacks; and why the better conditioned classes were, with few and occasional exceptions, so entirely exempt from it. Of all the patients whom I saw under this disease, not a dozen out of more than two hundred were of ability to procure meat for their families daily, and many only very occasionally; while the remainder, forming a great majority, scarcely ever tasted it. The poor, indeed, at that time notwithstanding the cleanliness and seeming

comfort in their houses, were suffering greatly from privations. Their food was of the coarsest bread, and of an inferior kind of potatoe, both being of an acescent quality, and rendered the more injurious by the quantity required to be eaten of them to form a sufficient meal. Such a diet indeed, is, but a mitigated species of famine, and from its unnutritive and unwholesome nature, is well suited, by the disorder it induces in the digestive organs, to predispose them to be acted on by the *malaria* of the Malignant Cholera. Hence, therefore, wherever the diet of a people consists of vegetable food, there the disease, other things being equal, prevails the most. The more general use in Paris of dishes and soups composed of vegetable matter, and the very defective state of its drainage, favoured the production of the disease; and many of the wealthy classes of the people, from the operation of these causes were predisposed, like the poor, to become the victims of it. In this country the people indulge generally, when their means admit of it, in the daily use of animal food, and their soups are not of a vegetable kind. Only a few persons, therefore, of that class, were attacked, and of the few who were so, it could generally be traced to some obvious irregularity in their diet, as a heavy supper of some unwholesome food, or fruit taken in an inordinate quantity, or at an unseasonable time. Of all the patients, amounting to considerably more than

two hundred, whom I saw in this complaint, there were but six of this class, of whom—two were female servants, who were sisters living in the same service, and who from choice had abstained from the use of meat,—one had dined the two previous days exclusively on indigestible ham,—two had eaten an inordinate quantity of pears in the evening,—and one was an habitual drunkard, and had seldom an appetite for any food. This last was the only one of these six who died.

But to prove farther that the predisposition to the disorder is produced by the diet, I may notice its occurrence in jails and poor-houses, where cleanliness is scrupulously enforced, and where also, in many of them, a rigid economy is exercised in the quantity and cheapness of the food allowed, no more being afforded than is required for the maintenance, under ordinary circumstances, of health and life. The diet is in fact chiefly of a vegetable kind ; and the bread is made from flour supplied by contract, and is often of an inferior quality ; and in most of the towns where the disease prevailed, the inmates of those places became affected by it. It has, indeed, been considered, that its occurrence in them arose principally from the number of persons accumulated together, and that it was thence to be inferred that it was propagated among them as an infection. But the notion of the disease being produced from an accumulation of persons together, is disproved by the fact of the inmates

of Chelsea and Greenwich hospitals, and of the other establishments for public charity throughout the country, being unaffected by it; although in every thing but in their diet, resembling those who inhabited the workhouses and jails. And even in these last also, it was not uniform in its appearance; for its attacks were in every instance averted or arrested, upon a change being made in the diet. This was the case, I am informed, in the workhouses of King's Lynn, where the disease greatly prevailed, and where, in anticipation of its attacks, a more generous allowance of meat was made to their inmates, and not a single case of it occurred among them. In this town, the jail and the two workhouses were visited by the disease, and were only relieved from it when those whose province it was to superintend the diet, yielded to the representations made to them, and consented to improve it. In the jail only three cases of the disease had occurred, when this most needful improvement was made, and it was immediately extinguished. In the workhouses these changes were made more tardily and less effectively, but ultimately with the same result. During the whole period of the prevalence of the disease in this town, the soldiers in the Garrison were strictly confined to their barracks, and all communication with the inhabitants rigidly cut off. The *real object* of the measure was to secure them from the assumed infec-

tion ; the *real effect* was only to secure them from indulging in those intemperate habits, to which soldiers are so prone, and which, notwithstanding the sufficiency and wholesomeness of their diet, might predispose them to be affected by the malady. The soldiery of this town, as well as of Sunderland, escaped it ; and their escape has been somewhat triumphantly quoted, as an evidence of the utility of the measures of precaution employed to protect them. But in escaping the attack of the disease, they were not as soldiers peculiar ; for notwithstanding its severity and assumed infectiousness, and the supposed facility of its communication by personal intercourse, and the declared liability of all, without distinction, to become affected by it, the soldiery of this and all other towns, with one or two especial exceptions, were wholly exempt from it. To account for this apparent anomaly, we must relinquish the notion of the quarantine having procured the exemption ; for it was not established in many towns before the complaint broke out in them, nor was it maintained in any with a consistent degree of strictness. Neither can it be asserted with truth, that the soldiery, with their wives and children, exceed, in their barracks, in personal cleanliness, multitudes of the poor who were attacked by the disorder. Nor had they, either here or at Sunderland, any advantage over those affected in the locality of their barracks, which in both

towns were contiguous to the river, and immediately in contact with the affected districts. The circumstances then of the soldiery differed in nothing, by which they should have been secured from the disease, excepting in the nature of their diet, which, in the article of meat, consisted of three quarters of a pound daily. In the wholesomeness and sufficiency of their food, they resembled the condition of the wealthier classes of society ; and as were these last, so also were the soldiery, secured by their diet from that physical condition which is superinduced in the poor by the acescency of their food, and by which is caused in them a predisposition to be morbidly affected.

But to prove farther, that it was the animal diet which occasioned the exemption of the soldiery under the ordinary concentration of the *malaria*,—for where the poison is highly concentrated, a slight predisposing cause will be adequate to give it effect,—and to prove by this, that it was not infectious,—for had it been infectious no diet would have been availing,—I may notice the fact, that the inmates of the Infirmary and Charter House, with some others of the public hospitals of the town, were immediately contiguous to the districts where it prevailed, as were also the wealthy inhabitants of the numerous streets adjoining and surrounding them, yet all these, although unrestrained by quarantine, and either directly or indirectly com-

municating with the sick, remained like the soldiery secure.

But besides the exemption of those inhabitants who lived only contiguous to the districts, there were great numbers of the class of little tradesmen, and the better order of artificers, who with their families lived in houses, and often even in apartments, immediately adjoining those in which were the dead and the dying, and who nevertheless, with scarcely an exception, passed unhurt through the ordeal of several months duration. Their diet was composed of a due proportion of meat, and, like the soldiery, they were secured; the very exceptions which occurred in regard to their exemption, being in every case traceable to some obvious deviation from the ordinary precautions in respect to their diet, and proving by the exception the truth of the rule.

It would seem to be uttering something like an idle truism, to affirm, that had the soldiery, instead of remaining under quarantine in their barracks, resided in the Infirmary or other public hospitals,—in the houses of the several streets adjoining the diseased districts,—or in those of the little tradesmen and artificers situated within them,—or even in those whose inmates were attacked by the disease (for a large proportion of them were cleaner than their own barracks,) and had they, at the same time, been adequately fed upon an animal diet, as they were in quaran-

tine,—that the result in regard to their security would have been the same. But farther,—and this is the ultimate conclusion to which all these observations are directed,—if the destitute poor, who were the victims of the disease, and whose diet was principally of the coarsest bread and potatoes, had been supplied daily with animal diet as the soldiers were,—or as the inhabitants living around them,—or the little tradesmen and others among them,—what is there to be opposed to the conclusion, that *they* too, placed thus under the same circumstances as the soldiery, or the other inhabitants around and among them,—that *they* too would have escaped the disease? The conclusion indeed, appears to me irresistible, as must likewise be our conviction of the evils which resulted from the prevalence of the opposite opinion, and from the adoption of those quarantine restrictions and regulations which were founded upon it. The evils which those restrictions inflicted upon the merchant and manufacturer, and general dealer, by the interception which they caused to their trade, were, though great, as nothing when weighed against those which the alarm about infection produced; for by this were increased the number and mortality of the sick; while their sufferings were greatly aggravated by the personal succour which they required, diminishing; and above all, by the misdirection which it gave to the public mind as to the means which were required to mitigate or avert it.

The central Board of Health, and all the local ones dependent on it, were formed, and all their measures adopted, on the avowed understanding that the disease was brought to us, and could only extend amongst us, as an infection ; while their members acting under the authority and sanction of government, appeared generally to consider it as no part of their office to institute any enquiry into the truth of that opinion. The question, indeed, was denounced as a “ *profitless* one,” and undeserving of serious consideration ; yet upon the decision of that most important, but neglected, question, hinged *all* the efficacy of all the preventive measures that were to be pursued ; and from which, according to the right or wrong decision upon it, would result, not merely more or less benefit, nor even much good or much evil, but *all the good* that could be obtained from the measures, or well nigh *all the evil* that could be feared from the disease. There was enough known to warrant a searching enquiry into the subject, by the early information obtained of the exemption from the disease, with only here and there a solitary exception, of all but the labouring poor in the towns of Sunderland and Newcastle ; and the immunity of Durham, and many of the villages around, from its attacks, had more than faintly exhibited the material truth, which all after-experience confirmed, and all prior experience, derived from its progress on the

continent, had more than rendered probable, that there were certain circumstances in the physical condition of a population, and in the localities they dwelt in, which respectively disposed them to, or wholly secured them from, the disease; and in these peculiarities the complaint stood apart, prominent and distinguished, from those which are infectious. To those who saw much of the disease, and were constant in their enquiries into the circumstances and modes of life of those who fell into it, it was fully manifest, that the habitual abstinence from animal diet, to which so many of the labouring poor were reduced, and the inordinate quantity, and, in many cases, the unwholesome quality of the bread and other vegetable food, which they ate, were the means which predisposed them to be affected by the disease. It was seen, that the other classes of the people, down to the little tradesman, and the well paid mechanic, living in the midst of the disease, and visiting the victims of it, used no other means than their usual wholesome diet to preserve them from it, *and they were preserved*. The *same* preventive means, therefore, were required, namely, the *same* diet, and they were *all* that were required, to secure the destitute poor of this country from it.

This then was the alone course that should have been pursued to arrest its progress,—having establishments for the daily issue to the destitute poor of rations of meat and animal soup, begin-

ning the issue of such rations on its first appearance in a town, and continuing it during the limited period in which the epidemic prevailed. To lighten the burden of such measures of relief, besides the aid derived from private subscription, employment might have been provided for the poor who wanted it, in works of public improvement. Nor would the local Boards of Health, in doing this, have exceeded their powers; for they were directed in the instructions issued to them by the Lords of the Privy Council, to employ every practicable method to obviate the occurrence of the disease; and to raise and apply funds for that purpose. Those, however, who claimed to take the lead in determining what the emergency demanded, were led to adopt those means alone, which the Central Board, and the Medical Authorities counselling or directing it, had instructed them to believe were required to limit its spread as an infection. The providing for the wants of the poor, and the issue to them of meat, were left to the casual direction and cost of private charity; and in a report now before me of the receipts and disbursements of one of these local Boards of Health, where the population of the town was nearly fifty thousand, the *item* for meat is under £15, although including in it the whole that was consumed in two hospitals, and during the entire period of several months in which it prevailed there. They saw, indeed, nothing but the danger of infection from it; and con-

sidered of nothing but the means that were to avert it. Houses, therefore, were hired, and too often in the diseased districts, which were converted into hospitals to separate the sick from their families, whom they expected thus to be secure from the disease ; but who, by being left to reside in the same locality, and to the continued abstinence from meat, and to the use of the same vegetable, and, at this time, eminently unwholesome diet, were attacked in succession by the complaint. In vain, under such a system of misdirection, were their funds expended in replacing the beds and clothing, which were ordered to be destroyed,—in whitewashing the inner and outer walls of the houses of the poor ; —in the burning of tar-barrels along the public ways,—in the use of disinfecting agents in the dwellings,—and in printing and dispersing instructions among the public, as to the use of these and other means, most fitted, as they believed, to guard them from infection. The course of the disease, as it well might do, proceeded wholly unchecked by such preventive means ; the duration of its stay in each locality being limited ; and the limitation in all being nearly alike, whatever might be the means employed, or the diligence used, to resist its progress. Nor was this deplorable waste, and misdirection of the resources placed in the hands of the members of the Boards of Health, for protecting the poor from the disorder, com-

pensated to them when under it. Their removal to the hospitals, besides being *useless* to their families from whom they were removed, as proved by being of no injury to the nurses and other attendants by whom they were received and nursed, was a source of discontent, and often of danger, to themselves, from the unavoidable delay which it caused in commencing the treatment, and which could be ill endured by a malady, in which all to be done well must be done quickly; whose progress is to be counted, not by days but by minutes; and of which the entire course is frequently commenced and completed within the brief period of five hours.

Such then, My Lord, are the facts which I have thought it right to bring under your notice, as affording a proof of the evil policy of those measures of restriction and precaution, which, on the assumption of the disease being infectious, the several Boards of Health had recommended and employed for arresting its progress. Such also are the facts which present themselves in support of the conclusion that the malady is not infectious, and to prove that the means required for controlling it, must consist in our counteracting the influence of the atmosphere to produce the complaint, by withdrawing, as far as it is practicable, the aid of those auxiliary remote causes which are found to be necessary to give it effect. These causes have been shewn to

be defective drainage, and a diet too exclusively vegetable ; and the measures, therefore, for obviating them must consist in improving the state of the public sewers in the localities where the disorder prevailed, and in the daily distribution of meat to the destitute of the labouring poor who reside in them ; the issue to commence immediately upon the epidemic appearing, and to be continued during the limited period of its stay.

From the knowledge obtained by its former visits, we are acquainted with the localities it attacks, and the average time of its continuance, with the number and class of its victims ; and it would be easy to shew, that the sum to be expended in carrying into effect the measures I have proposed, would not exceed what was so unprofitably spent to arrest it as an infection, and would fall greatly below the sum which the country lost by the quarantine, through the interruption and delay which it inflicted on trade.

There is, however, a prejudice and alarm upon the subject of infection pervading the public mind, which require to be removed, and should precede any new measures of relief. And as the erroneous opinions entertained by the public on this subject were mainly derived* from instructions and regulations issued under the authority of the Lords of the Privy Council, and adopted and acted on by the several

* The following extract from an order issued by a committee of the Lords of his late Majesty's Most Hon. Privy Council, and published in the Gazette, of Oct 21, 1831, will illustrate strongly the degree of alarm about infection which

Boards of Health throughout the country; so they will be best corrected by a commission appointed under the same authority, whose office shall be to prosecute an enquiry into all the facts connected in any way with the origin of the disease, and embody the result of it in a report. Hitherto nothing has been done in this, nor I believe, in other countries, in the way of enquiry, but much evil in all from the neglect of it; and now that the period has arrived when this the most destructive of all maladies is again approaching our shores, and is already, indeed, on the very pathway along which it formerly came to us, it becomes this great and influential country, as a duty alike due to herself and others, to enter upon this searching scrutiny, and, with the causes, enquire also into the modes of treatment,—for this too demands especial attention; and thus shall England, in this as in all other things that are honorable and useful, maintain the position most befitting her, and most answerable to the rank awarded her by the world, of being under Providence, the foremost among civilized nations to advance

was entertained by the public authorities, and which was unhappily communicated to every class of the community, “Every case of the disease should be removed as soon as detected to an hospital, provided the family of such affected person consent to such removal, and in case of refusal a conspicuous mark (“sick”) should be placed in front of the house, to warn persons that it is in quarantine, and even when persons with the disease shall have been removed, and the house shall have been purified, the word “CAUTION,” should be substituted, as denoting suspicion of the disease, and the inhabitants of such house shall not be at liberty to move out or communicate with other persons until, by the authority of the local board, the mark shall have been removed.” It is believed that these unfortunate instructions were never acted upon to the letter; but it was enough to have issued them, to account for the many evils which sprung from them, and for the deep regret which must be felt by those medical authorities through whose counsel these orders were promulgated.

the interests of truth and mercy, and, by her precepts and example, to instruct and benefit mankind.

I have the honor to subscribe myself,
with the utmost respect,

MY LORD,—

Your Lordship's most obedient
and humble Servant,
JOSEPH AYRE, M.D.

Hull, Oct. 16, 1837.

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